



GREEN BUILDING CODE RESIDENTIAL PLAN CHECKLIST

PLANNING & BUILDING DEPARTMENT • COUNTY OF SAN LUIS OBISPO
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SITE DEVELOPMENT

BGR 01

STORMWATER

A plan has been developed, and will be implemented, to manage storm water drainage during construction. CGC 4.106.2 & 4.106.3

The site shall be planned and developed to keep surface water away from buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows. CGC 4.106.3

ENERGY EFFICIENCY

BGR 02

COMPLIANCE DOCUMENTATION

2013 Energy Code performance compliance documentation must be provided in 8-1/2" X 11" format and must be replicated on the plans. All documentation with HERS requirements shall be watermarked CERTIFIED prior to issuance.

BGR 03

WALL INSULATION

Walls with 2 X 6 and larger framing require R-19 insulation (CEnC150.0 (c) 2)

BGR 04

PIPING INSULATION

Hot water piping insulation (CEnC150.0 (j) 2 A ii)

BGR 05

LIGHTING

Lighting – new mandatory requirements for indoor rooms. (CEnC150.0 (k))

BGR 06

DUCT INSULATION

Duct insulation (R-6) required (CEnC 150.0 (m) 1)

BGR 07

DUCT TESTING

Duct leakage testing – 6% w/o air handler and 4% with air handler (CEnC 150.0 (m) 11)

BGR 08

RETURN DUCT

Return duct design/fan power, airflow testing, and grill sizing requirements (CEn150.0(m)13)

BGR 09

WATER HEATING

Water heating – 120 volt receptacle < 3 ft., Cat III or IV vent, and gas supply line capacity of at least 200,000 Btu / hour (CEnC150.0 (n))

BGR 10

HERS VERIFICATION

New third-party HERS verification for ventilation and indoor air quality (CEnC150.0 (o))

BGR 11

U-FACTOR

New mandatory U-factor (0.58) for fenestration and skylights (CEnC150.0 (q))

BGR 12

LUMINAIRE EFFICIENCY

Luminaire efficiency levels 2013 California Energy Code Table 150.0 B

BGR 13

REFRIGERANT CHARGE VERIFICATION

Refrigerant charge verification for ducted package units, mini-splits, and other units (CEnC150.1 (c) 7)

BGR 14

RADIANT BARRIER

Radiant barrier now required in Climate Zone 3 (CEnC150.1 (c) 2)

BGR 15

HIGH PERFORMANCE WINDOWS

Reduce U-factor (0.32) and SHGC (0.25) for high performance windows (CEnC150.1 (c) 3 A)

WATER EFFICIENCY AND CONSERVATION

BGR 16

WATER EFFICIENCY AND CONSERVATION\ PLEASE CHECK FOR LOS OSOS OR NIPOMO WATER CONSERVATION FEATURES

Indoor water use shall be reduced by at least 20 percent using one of the following methods. (CGC 4.303.1)

1. Water saving fixtures or flow restrictors shall be used.
2. A 20% reduction in baseline water use shall be demonstrated.

When using the calculation method specified in Section 4.303.1 multiple showerheads shall not exceed maximum flow rates. 4.303.2

Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements. 4.303.3
OUTDOOR WATER USE

Automatic irrigation systems controllers installed at the time of final inspection shall be weather-based. 4.304.1

BGR 17

PLUMBING FIXTURES

Plumbing fixtures (water closets and urinals) will comply with the following:

1. The effective flush volume of all water closets will not exceed 1.28 gal / flush. 2013 CGC 4.303.1.1
2. The effective flush volume of urinals will not exceed 0.5 gal / flush. 2013 CGC 4.303.1.2

BGR 18

FAUCETS AND SHOWERHEADS

The fittings for faucets and showerheads will have all required standards listed on the plans; 1.5 GPM for faucets and 2.0 GPM for showers. 2013 CGC 4.303.1.3 and 2013 CGC 4.303.1.4

BGR 19

WATER FIXTURE RETROFIT REQUIRED

California State Plumbing Code now requires that any existing water fixtures that exceed the thresholds in the water use baseline table shown below shall be retrofitted, bringing them up to CAL Green mandatory requirements.

Fixture Type

Maximum

Flow Rate

Showerheads	2.5 gpm @ 80 psi
Lavatory faucets nonresidential	0.5 gpm @ 60 psi
Lavatory faucets residential	2.2 gpm @ 60 psi
Kitchen faucets	2.2 gpm @ 60 psi
Water Closets	1.28 gallons/flush
Urinals	1.0 gallons/flush

BGR 20

WATER FIXTURE REQUIRED FLOW RATES

California State Plumbing Code now requires that all water fixtures meet the following minimum water use requirement for fixtures.

Fixture Type

Maximum

Flow Rate

Showerheads	2.0 gpm @ 80 psi
Lavatory faucets nonresidential	0.5 gpm @ 60 psi
Lavatory faucets residential	2.2 gpm @ 60 psi
Kitchen faucets	1.5 gpm @ 60 psi
Water Closets	1.28 gallons/flush
Urinals	0.5 gallons/flush

BGR 21

LANDSCAPING

New Construction shall comply with CAL Green Tier 1 for outdoor water requirements. This means a Landscaping and Irrigation Plan is required with your new house.

Cal Green Mandatory Measures: (With Tier 1 required this becomes mandatory)

4.304.1 Irrigation controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.

2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Cal Green Tier I:

CGC A4.304.1 Install a low-water consumption irrigation system which minimizes the use of spray type heads.

CGC A4.304.2 A rainwater capture, storage and re-use system is designed and installed.(optional)

CGC A4.304.3 A water budget shall be developed for landscape irrigation. (optional)

CGC A4.304.4 Provide water efficient landscape irrigation design that reduces the use of potable water; does not exceed 65 percent of ETo times the landscape area.

PROVIDE AND INCORPORATE INTO THE PLANS A SEPARATE LANDSCAPE AND IRRIGATION PLAN BASED ON THE ABOVE CRITERIA.

ENHANCED DURABILITY AND REDUCED MAINTENANCE

BGR 22

Annular spaces around pipes, electric cables, conduits or other openings in sole/bottom plates at exterior walls will be rodent-proofed by closing such openings with cement mortar, concrete masonry, or similar method acceptable to the enforcing agency. 2013 CGC 4.406.1

CONSTRUCTION WASTE REDUCTION, DISPOSAL, AND RECYCLING

BGR 23

A minimum of 70% of the construction waste generated at the site is diverted to recycle or salvage per Title 19 San Luis Obispo County Ordinance.

Where a local jurisdiction does not have a construction and demolition waste management ordinance, a construction waste management plan shall be submitted for approval to the enforcing agency. CGC 4.408.2

BUILDING MAINTENANCE AND OPERATION

BGR 24

An operation and maintenance manual will be provided to the building occupant or owner. 2013 CGC 4.410.1

FIREPLACES

BGR 25

GAS FIREPLACES

Any gas fireplaces will be direct-vent, sealed-combustible type. 2013 CGC 4.503.1

BGR 26

STOVES

Any wood stove or pellet stove will comply with US EPA Phase II emission limits. 2013 CGC 4.503.1

POLLUTANT CONTROL

BGR 27

COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION

At the time of rough installation, during storage on the construction site, and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution components openings will be covered with tape, plastic, sheet metals, or other methods acceptable to the enforcing agency to reduce the amount of water, dust, or debris that may enter the system. 2013 CGC 4.504.1.

BGR 28

PAINTS AND COATINGS

Paints and coatings will comply with VOC limits per CGC 4.504.2.2.

BGR 29

AEROSOL PAINTS AND COATINGS

Aerosol paints and coatings will meet the Product-weighted MIR limits for ROC and other requirements. 2013 CGC 4.504.2.3.

BGR 30

VERIFICATION

Documentation provided that verifies compliance with VOC finish materials. 2013 CGC 4.504.2.4.

BGR 31**CARPET SYSTEMS**

Carpet system installed in the building interior will meet the testing and product requirements found in the 2013 California Green Building Code. 2013 CGC 4.504.3.

BGR 32**RESILIENT FLOORING SYSTEMS**

Where resilient flooring is installed, at least 80% of the floor area receiving resilient flooring will comply with the California Green Building Code requirements. 2013 CGC 4.504.4.

BGR 33**COMPOSITE WOOD PRODUCTS**

Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior and exterior of the building will comply with the low formaldehyde emission standards. 2013 CGC 4.504.5.

BGR 34**V.O.C.'S -4.504.2.4 DOCUMENTATION SHALL BE PROVIDED TO VERIFY THAT COMPLIANT VOC LIMIT FINISH MATERIALS HAVE BEEN USED.**

CGC 4.504.1 Duct openings and other related air distribution components openings shall be covered during construction.

CGC 4.504.2.1 Adhesives, sealants and caulks shall be compliant with VOC and other toxic compound limits.

CGC 4.504.2.2 Paints, stains and other coatings shall be compliant with product weighted MIR limits for VOC and other toxic compounds.

CGC 4.504.2.3 Aerosol paints and coatings shall be compliant with product-weighted MIR limits for VOC and other toxic compounds.

CGC 4.504.2.4 Documentation shall be provided to verify that compliant VOC limit finish materials have been used.

CGC 4.504.3 Carpet and carpet systems shall be compliant with VOC limits.

CGC 4.504.4 50% of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or be certified under the Resilient Floor Covering Institute(RFCI) FloorScore Program.

CGC 4.504.5 Particleboard, medium density fiberboard (MDF) and hardwood plywood used in

interior finish systems shall comply with low formaldehyde emission standards.

INTERIOR MOISTURE CONTROL**BGR 35****CONCRETE SLAB FOUNDATION**

A capillary break will be installed if a slab on grade foundation system is used. The use of a 4" thick base of ½" or larger clean aggregate under a 6 mil vapor retarder with joint lapped not less than 6" will be provided unless an engineered design has been submitted and approved by the Building Division. 2013 CGC 4.505.2 and California Residential Code (CRC) R506.2.3.

BGR 36**MOISTURE CONTENT OF BUILDING MATERIALS**

Building materials with visible signs of water damage will not be installed. Wall and floor framing will not be enclosed when the framing members exceed 19% moisture content. Moisture content will be verified prior to finish material being applied. 2013 CGC 4.505.3.

INDOOR AIR QUALITY AND EXHAUST**BGR 37****BATHROOM EXHAUST FAN**

Exhaust fans that are ENERGY STAR-compliant, ducted and that terminate outside the building will be provided in every bathroom. 2013 CGC 4.506.1.

Unless functioning as a component of a whole-house ventilation system, fans must be controlled by a humidistat. 2013 CGC 4.506.1

ENVIRONMENTAL COMFORT**BGR 38**

The heating and air-conditioning system will be sized, designed and have their equipment selected using the following methods:

1. Heat Loss/Heat Gain values in accordance with ANSI/ACCA 2 Manual J-2004 or equal;
2. Duct systems are sized according to ANSI/ACCA 1, Manual D-2009 or equivalent;
3. Select heating and cooling equipment in accordance with ANSI/ACCA 3, Manual S-2004 or equivalent. 2013 CGC 4.507

INSTALLER SPECIAL INSPECTOR QUALIFICATION

BGR 39

INSTALLER TRAINING

HVAC system installers will be trained and certified in the proper installation of HVAC systems and equipment by a recognized training/certification program. 2013 CGC 702.1.

702.2 Special inspectors employed by the enforcing agency must be qualified and able to demonstrate competence in the discipline they are inspecting.

VERIFICATION

BGR 40

Upon request, verification of compliance with this code may include construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the Building Division that will show substantial conformance with the 2013 Code requirements. 2013 CGC 703.1

HOMES < 2,500 SQUARE FEET

BGR 41

GREEN BUILDING CHECKLIST

New homes 2,500 SF or less, shall submit a green building checklist to include on the building plans one of the following (no additional third party inspection is required for section 19.08.040 C, verification of these requirements shall be completed by the County Planning and Building Department):

1. Green Point Rated, achieving a minimum of 75 points. The project is not required to exceed current Title 24 Part 6 energy requirements as a part of this checklist. (<http://www.builditgreen.org/guidelines--checklists/>)
2. LEED (Leadership in Energy and Environmental Design) for Homes achieving a minimum of 40 Points. The project is not required to exceed current Title 24 Part 6 energy requirements as a part of this checklist. (<http://new.usgbc.org/>)
3. CAL Green Tier 1. The project is not required to exceed current Title 24 Part 6 energy

requirements as a part of this checklist. (<http://www.bsc.ca.gov/home/calgreen.aspx>)
PROVIDE A CHECKLIST ON THE PLANS FOR ONE OF THE ABOVE OPTIONS.

BGR 42

THIRD PARTY VERIFICATION FOR HOMES > 2,500 SQUARE FEET

New homes greater than 2,500 SF shall complete third party verified certification (you will have to hire a third party certification service). Certification shall include one of the following: (a \$500 incentive plan check credit is available)

1. Green Point Rated with 75 points minimum (<http://www.builditgreen.org/guidelines--checklists/>); or
2. LEED for Homes Certified. (<http://new.usgbc.org/>)

PROVIDE ONE OF THE ABOVE COMPLETED CHECKLISTS ON THE PLANS. ADD THE THIRD PARTY VERIFICATION REQUIREMENT ON THE TITLE SHEET, ALONG WITH THE NAME AND PHONE NUMBER OF THE CERTIFIED THIRD PARTY VERIFIER YOU WILL BE WORKING WITH THROUGHOUT THE CONSTRUCTION PHASE OF THE PROJECT.

SLO GREEN BUILDING CODE REQUIRED MEASURES

BGR 43

HOME ENERGY RATING REQUIRED FOR ADDITIONS AND/OR ALTERATIONS

Your permit valuation for your addition/alteration is over \$10,000. Therefore, per the San Luis Obispo County Green Building Ordinance, you are required to hire a certified Home Energy Rating System (HERS) rater to perform a Home Energy Rating prior to construction completion. See the attached Green Building Ordinance handout for links to companies that perform HERS ratings

BGR 44

FUTURE CONDUITS FOR PV SOLAR SYSTEM REQUIREMENTS

BGR 01 New Construction: Plans shall identify a conduit system from the main electrical panel to an accessible location. Location may be either attic space, roof structure, or an area onsite designated for future renewable energy generation to accommodate a point of connection on the load side of the electrical service

disconnecting means. The conduit system shall be sized per Table 19.08.040(H)(1). The County recognizes there are multiple service configurations and options currently available. Service options not listed in Table 19.08.040(H)(1) shall default to CEC Article 690 and 705 requirements, where conduit shall be sized to accommodate a branch circuit sized at 20% of the rating of the busbar. Renewable energy connections installed on the supply of the service disconnecting means are permitted as allowed per the CEC, however, shall meet all local Utility requirements, in addition, shall maintain the gear's product listing (i.e. UL or equivalent listing agency).

Table 19.08.040(H)(1)
Minimum Conduit Size Requirements for a Future Renewable energy System

Service Rating Renewable Capacity Conduit Size Required

100A 20 Amps @ 120 Volts (1) 3/4" Conduit
120A 24 Amps @ 120 Volts (1) 3/4" Conduit
150A 30 Amps @ 120 Volts (1) 3/4" Conduit
200A 40 Amps @ 120 Volts (1) 1" Conduit
400A 80 Amps @ 120 Volts (1) 1-1/4" Conduit

BGR 47

WATER HEATER RECIRCULATING PUMPS REQUIRED

Per the SLO County Green Building Ordinance; for new construction or when alterations or additions exceed 50% of habitable space, an on-demand recirculating system shall be installed. Please call this out on your floor plans.

BGR 45

RADIANT BARRIER ROOF SHEATHING REQUIRED FOR NEW CONSTRUCTION, ADDITIONS AND/OR ALTERATIONS

Per the SLO County Green Building Ordinance all for new construction, replacement roof sheathing and addition roof sheathing shall be radiant barrier. Please call this out BOLDLY on your floor plans and framing plans. Including the gable ends if applicable.

BGR 46

TIMER SWITCH REQUIRED FOR ALL OUTDOOR HEATING APPLIANCES

Per the SLO County Green Building Ordinance; All outdoor non-renewable sources of heat shall be on mechanical timers with a maximum of 4 hours' time limit. Exception: Portable propane heaters with tanks 5 gallons or less. Please call this out on your floor plans.